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"COMPARATIVE STUDY ON SELECTED MOTOR ABILITY COMPONENT AND PHYSIOLOGICAL VARIABLES BETWEEN MALE SOCCER PLAYERS AND BACHELOR OF PHYSICAL EDUCATION STUDENTS"

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ABSTRACT

The purpose of this study was to compare the motor ability and physiological variables between men soccer players and bachelor of Physical Education Students. A total of thirty (N=30) subjects were selected randomly from North 24 parganas district for this study. Out of 30 players, 15 players were from soccer players and 15 from bachelor of Physical Education Students. The age of the players ranged from 18 to 21 years. The variable undertake for the study are: speed, agility and resting plus rate, systolic blood pressure, diastolic blood pressure. Mean standard deviation and t-test ware used as statistical calculations at 0.05 level of confidence. The result of study ware reflects that speed significance and agility, resting pulse rate, systolic blood pressure and diastolic blood pressure no significance deference observed between men soccer player and bachelor of physical education students.

KEYWORDS: Soccer Players, Bachelor of Physical Education Students, Motor Ability Component, Physiological Variables

INTRODUCTION

The game of soccer requires tremendous physical fitness, as the duration of the game is ninety minutes in which basic movements such as the kicking, running, jumping throwing, dodging etc are involved. Endurance play a vital role in order to play continuously for ninety minutes. Strength is also essential for taking powerful kicks tackling, throwing, heading and so on. For dribbling, frequent change of direction of body movements that is agility is an essential element, flexibility plays as major role for reducing the chances of injury as well as perfection of skill, speed, co-ordination, reaction time and balance are also important for exhibiting the modern skillful soccer performance.

Indeed, soccer is a team sport that is played in an outdoor field and requires a high standard of preparation through the development of physical performance skills, as well as tactical and technical expertise, in order to com- pleat 90 minutes of competitive play. According to (Triki et al) Soccer training is mainly based on movement implementing the endurance qualities consisting of moderate activity alternating with periods of intermittent high intensity, leading to a significant production of metabolic heat, mostly due to the fact that the average work intensity during a soccer match is usually about 75–90% of maximum heart rate, respectively 70–85% of VO_2 max (Rexhepi & Brestovci, 2010).

A balanced training programme of an athlete will consist of five types of exercises. Each of these exercises will develop specific bio motor abilities and which are called speed, endurance, strength, flexibility and coordination.

None of the five bio motor abilities can be developed in isolation. When one of the bio motor abilities is developed, the other bio motor abilities will also develop in proportion with the intensity and duration of the exercise.

When an athlete or trainee does training that require running at maximum speed regularly, the maximum speed of the athlete/ trainee will increase. If the maximum speed exercises consist of several repetitions, speed endurance will also be developed. Because of the frequent accelerations required during the repetitions, elastic strength will also be developed.

Speed in athletics/sports means the rate of change of the athlete's position. The capacity to move fast is not a natural motor ability and needs to be developed on a regular basis. The various sports/athletics events require different types of speed.

It is the ability of the person to change direction while moving at or near full speed. More specifically, agility is the ability of a person to change direction or body position quickly (as fast as he can) and regain body control to proceed with another movement. Agility is highly dependent upon or interrelated with speed, strength, balance and co-ordination. It is developed through practice and confidence in movement. The acquisition of agility is not only important to success in games and sports requiring quick changes and dodging objects or opponents, e.g. Gymnastics, footballs, basket ball, hockey, judo etc. etc. but also to safety outside of the play situation. Therefore to develop agility, the daily physical activity programmed should include fast starts, stops, and changes of body direction at a speed.

There are numerous physiological terms being used in the field of Physical Education and Sports. For the teachers of Physical Education, the clarity of these terms is utmost important to make the students understand fully, so that better teaching and training may be facilitated.

The purpose of this section is to explore various changes in different systems of the body with respect to the Physiological mechanisms involved as well as to the relevant training factor. The teachers of Physical Education, Coaches, Sports persons and Students of Physical Education must be aware about the effects of Physical Exercises training on various systems to realize the qualitative changes in the body for better performance.

The pulse rate is a measurement of the heart rate, or the number of times the heart beats per minute. As the heart pushes blood through the arteries, the arteries expand and contract with the flow of the blood. Taking a pulse not only measures the heart rate, but also can indicate the following: * Heart rhythm * Strength of the pulse

The normal pulse for healthy adults ranges from 60 to 100 beats per minute. The pulse rate may fluctuate and increase with exercise, illness, injury, and emotions. Females ages 12 and older, in general, tend to have faster heart rates than do males. Athletes, such as runners, who do a lot of cardiovascular conditioning, may have heart rates near 40 beats per minute and experience no problems.

Blood pressure is the pressure that blood exerts against the walls of the arteries. The amount of pressure depends upon the strength and rate of the heart's contraction, the volume of blood in the circulatory system, and the elasticity of the arteries. Blood pressure is measured with an instrument called a sphygmomanometer.

To take blood pressure, the cuff is wrapped around the individual's arm. A stethoscope is placed over the arteries of the arm just below the cuff. The pulsations of blood in the arteries can then be heard. Air is pumped into the cuff, causing it to press down on the arteries. This stops the flow of blood, and the sounds stop. Then air is slowly let out of the cuff. When the pressure of the cuff becomes less than the blood pressure, the blood flow returns. The pressure at which the flow of blood resumes is called the systolic pressure. It represents the blood pressure when the heart is contracting. This pressure is determined by reading the gauge or the scale on the mercury tube. As more air is let out of the cuff, the sounds become muffled. The pressure at this point is called the diastolic pressure. It represents the blood pressure while the heart is relaxing.

Measurements of blood pressure consist of two numbers, such as 120/80. The first number refers to the systolic pressure, and the second number to the diastolic pressure. Normal systolic blood pressure for adults is about 120 millimeters. Some doctors consider pressures over 140 millimeters to be high. They also consider diastolic pressures of over 90 millimeters to be high. Other doctors believe a reading greater than 150/95 indicates high blood pressure. Strong emotion, such as anger or fear, may lead to a temporary rise in blood pressure. Severe shock may cause a sharp fall in blood pressure.

Blood pressure usually rises with age because of the decreased elasticity in the arteries and slow down the flow of blood. High blood pressure may cause heart failure, a stroke, or kidney failure. Doctors call high blood pressure essential hypertension when its cause is unknown. In 1957, scientists synthesized (made chemically) a substance in the blood believed to cause high blood pressure. Researchers use this substance, called angiotensin II, to study the causes of hypertension. Low blood pressure is called hypotension. Generally, hypotension needs not be treated.

MATERIALS AND METHODS

Subjects:

The sample consisted of 15 male district level soccer players and 15 bachelor of physical education students were selected randomly from North 24 parganas district and Nadia district, aged ranged of the subjects were 18 to 21 years. All soccer players had winner in North 24 parganas district inter-collegiate football tournaments, session 2023-24. The players were informed the objective of the studies planned, and they as well as their College Physical Education Directors/coaches consented to voluntary testing. The selected motor ability are speed, agility and physiological variables are pulse rate, systolic and diastolic blood pressure.

Selection of Tests

The selected motor ability, and physiological variables and their respective tests was administered are presented in Table 1.

S.L NO	Variables	Tests
Motor Ability		
1.	Speed	Measured by 50 Yard dash
2.	Agility	Measured by 4×10 Shuttle Run
Physiological Variables		
3.	Resting Plus Rate	Measured by Dr. Morepen Blood Pressure Monitor (model-15)
4.	Systolic Blood Pressure	Measured by Dr. Morepen Blood Pressure Monitor (model-15)
5.	Diastolic Blood Pressure	Measured by Dr. Morepen Blood Pressure Monitor (model-15)

Table 1: List of Variables and their respective Test

Statistical Analysis

The statistical analysis of the data gathered for the comparison of motor ability and physiological Variables of inter-collegiate district winner soccer players and bachelor of physical education students analyzed by using statistical independent 't' test. To testing the hypothesis the level of significance at 0.05 level of confidence was considered adequate for the purpose of this study.

RESULTS

Results were presented in tables, graph and interpreted as follows:

Variables	Groups	Mean	standard deviation	t-value
Speed	Soccer players	6.90	1.00	3
	Physical Education students	7.10	1.13	

Table 2: Mean, Standard deviations and t-value of speed scores of Inter-collegiate winner soccer players and bachelor of Physical Education students.

Tab 't'$_{0.05}$(28)=2.048

Table 2 showing the mean, standard deviation of soccer players and bachelor of Physical Education students of Speed has been found 6.90±1.00 and 7.10±1.13; that 't' value of Speed is 3, which is significant.

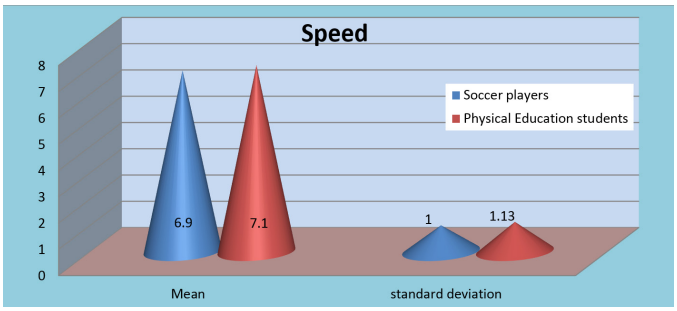

Figure1, Shows that Mean and Standard Deviation of speed between soccer players and bachelor of Physical Education students

Variables	Groups	Mean	standard deviation	t-value
Agility	Soccer players	9.74	0.74	1.70
	Physical Education students	10.27	0.90	

Table 3: Mean, Standard deviations and t-value of agility scores of Inter-collegiate winner soccer players and bachelor of Physical Education students.

Tab't'$_{0.05}$(28)=2.048

Table 3 showing the mean, standard deviation of Soccer players and bachelor of Physical Education students of Agility has been found 9.74±0.74 and 10.27±0.90; that 't' value of Agility is 01.70, which is not significant.

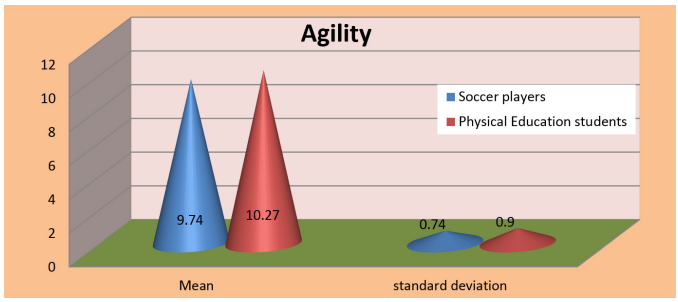

Figure 2: Shows that Mean and Standard Deviation of agility between soccer players and bachelor of Physical Education students

Variables	Groups	Mean	standard deviation	t-value
Resting Plus Rate	Soccer players	85.86	11.25	0.58
	Physical Education students	83.20	15.46	

Table 4: Mean, Standard deviations and t-value of Resting Plus Rate scores of Inter-collegiate winner soccer players and bachelor of Physical Education students.

Tab't'$_{0.05}$(28) =2.048

Table 4 showing the mean, standard deviation of soccer players and bachelor of Physical Education students of Resting plus Rate has been found 85.86±11.25 and 83.20±15.46; that't' value of plus Rate is.0.58, which is not significant.

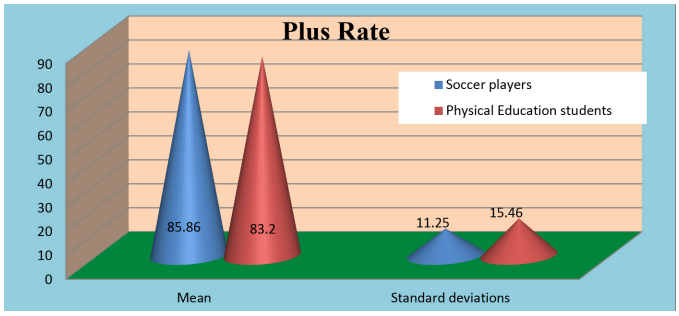

Figure 3: Shows that Mean and Standard Deviation of Resting Plus Rate between Soccer players and bachelor of Physical Education students

Variables	Groups	Mean	standard deviation	t-value
Systolic Blood Pressure	Soccer players	124.4	9.45	0.01
	Physical Education students	128.9	19.96	

Table 5: Mean, Standard deviations and t-value of Systolic Blood Pressure scores of Inter-collegiate winner Soccer players and bachelor of Physical Education students.

Tab't'$_{0.05}$(28) =2.048

Table 5 showing the mean, standard deviation of soccer players and bachelor of Physical Education students of Systolic Blood Pressure has been found 124.4±9.45 and 128.9±19.96; that 't' value of Systolic Blood Pressure is 0.01, which is not significant.

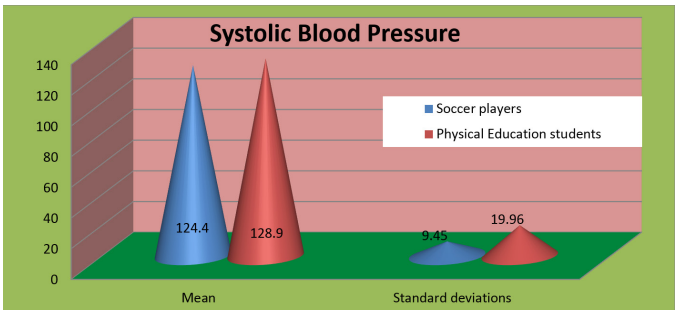

Figure 4: Shows that Mean and Standard Deviation of Systolic Blood Pressure between Soccer players and bachelor of Physical Education students

Variables	Groups	Mean	standard deviation	t-value
Diastolic Blood Pressure	Soccer players	76.86	3.99	0.16
	Physical Education students	97.13	26.03	

Table 6: Mean, Standard deviations and t-value of Diastolic Blood Pressure scores of Inter-collegiate winner Soccer players and bachelor of Physical Education students.

Tab't'$_{0.05}$(28) =2.048

Table 5 showing the mean, standard deviation of soccer players and bachelor of Physical Education students of Diastolic Blood Pressure has been found 76.86±3.99 and 97.13±26.03; that 't' value of Diastolic Blood Pressure is 0.16, which is not significant.

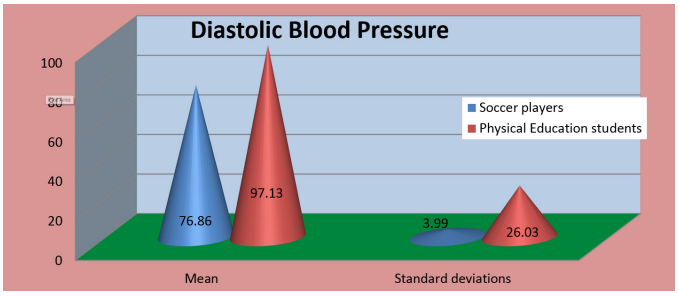

Figure 5: Shows that Mean and Standard Deviation of Diastolic Blood Pressure between Soccer players and bachelor of Physical Education students

DISCUSSIONS

The results of t-ratio of it showed significant difference in some motor ability and physiological Variables of soccer players and bachelor of Physical Education students. In motor ability speed showed significant difference between soccer players and bachelor of Physical Education students, agility showed no significant difference between soccer players and bachelor of Physical Education students. In physiological variables are pulse rate, systolic and diastolic blood pressure no significant difference between soccer players and bachelor of Physical Education students.

CONCLUSIONS

1. It was seen that there is significant difference in speed of soccer players and bachelor of Physical Education students.
2. It was seen that there is no significant difference in agility of soccer players and bachelor of Physical Education students.
3. There is no significant difference in pulse Rate of soccer players and bachelor of Physical Education students.
4. There is no significant difference in systolic blood pressure of soccer players and bachelor of Physical Education students.
5. There is no significant difference in diastolic blood pressure of soccer players and bachelor of Physical Education students.

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